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DOI:

[10.1017/S0305741015001691](https://doi.org/10.1017/S0305741015001691)

Document Version

Peer reviewed version

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Citation for published version (APA):

Salisbury, D., & Jones, L. (2016). Exploring the Changing Role of Chinese Entities in WMD Proliferation*. *CHINA QUARTERLY*, 225, 50-72. <https://doi.org/10.1017/S0305741015001691>

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Exploring the Changing Role of Chinese Entities in WMD Proliferation¹

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Abstract: *This paper seeks to provide an original examination of the nature of the proliferation of sensitive materials and technologies by Chinese entities. A number of publications have attempted to understand the issue of proliferation stemming from businesses based in China, with many having commented on the efforts undertaken both by international actors and by the Chinese government to prevent it. However, relatively few scholars have sought, in any systematic and sustained way, to understand the types of Chinese companies involved in proliferation and the evolution of their behaviour. This paper seeks to argue and account for the declining role of – and concern regarding – Chinese state-owned enterprise in the global proliferation problem. Different accounts for this change, and the relating proliferation challenge posed by China are examined.*

Keywords: proliferation; nuclear; missile; business; compliance; export controls; sanctions

1.0 Introduction

The actions of entities based in China are often viewed as a significant challenge facing the international community in preventing the proliferation of nuclear and other unconventional weapons.² China's non-proliferation record has certainly been mixed. Throughout the 1990s, numerous controversial transfers of sensitive technologies were documented. The role of Chinese entities in supplying the programmes of Iran and North Korea – arguably the two most significant proliferation challenges – continues today. Government officials have estimated that some 90% of goods destined for those programmes travel through China.³ Although many challenges remain, the past two decades have marked the beginnings of concrete commitments from China in conforming to international standards to curb the spread of WMD.

This paper seeks to provide an original examination of the endurance and nature of the proliferation problem posed by Chinese entities. Whilst some studies have tackled the issue of China's illicit trade, and efforts to prevent it – including adoption of export controls and sanctions – fewer scholarly contributions have sought to consider the types of Chinese entities involved in proliferation. Crucially, none have sought to characterise and attempt to explain how this has changed over time. Focussing on the factors that have influenced their behaviour, we consider whether there has been, as appears to be the case, a decrease in the role of, and concern regarding, the involvement of Chinese SOEs. We argue that this apparent decrease cannot be fully understood without undertaking a qualitative assessment of the evolving types and behaviours of Chinese entities. We also draw upon literature regarding opportunities and challenges faced by industries and

¹ This research was undertaken with generous support from the UK Foreign and Commonwealth Office and the MacArthur Foundation.

² 'Illicit' trade is used in this context to refer to business that may be illegal or technically legal but contrary to non-proliferation norms. National controls vary from country to country making it difficult to speak of 'illegal' and 'legal' business transactions for example.

³ Bowen, Stewart and Salisbury (2013).

governments in other countries when using export controls to prevent proliferation, and in the approaches of industries in China to risk management.

2.0 Background

Whilst China first acquired nuclear weapons and ballistic missiles in the 1960s, its role in onward proliferation of WMD-related technologies can in large part be first seen in the 1980s. This followed Deng Xiaoping's efforts to modernise the economy resulting in a change in the role of arms transfers and, more broadly, strategic technologies. Before 1978, most transfers were to other revolutionary states and strategic allies. However, in later years, foreign arms transfers were apparently indiscriminate, exploited to revive the Chinese economy and to fund the military modernisation of the People's Liberation Army.⁴

Several high-profile and controversial transfers of WMD-related technologies took place in the 1980s and 1990s.⁵ The more controversial of these involved transfers to Pakistan's weapons programme and included the alleged transfer of weapons design information.⁶ In 1987, DF-3s sold to Saudi Arabia were the longest range nuclear-capable missiles outside the UN Security Council permanent members. Technology and Highly Enriched Uranium were transferred to a nuclear reactor – not under IAEA safeguards – that was constructed in Algeria with Chinese help.⁷ Numerous allegations were also made of transfers of missile technologies to Pakistan and North Korea, and chemical weapons-related material to Iran.

However, the 1990s also represented something of a watershed in terms of Chinese attitudes to non-proliferation with the first concrete commitments from China to conform to international standards to curb the spread of WMD. In 1991, China agreed to abide by the guidelines for missile-related exports of the MTCR and, in 1992, it acceded to the Nuclear Non-proliferation Treaty. Throughout the 1990s, China made more international commitments, signing the Chemical Weapons Convention in 1993 (ratified in 1997), joining the Zangger Committee in 1997, and supporting UNSCR 1172 (1998) preventing fissile material and missile exports to India and Pakistan following their nuclear tests.

The transformation of China's export control system and the principles that govern licensing decisions, meanwhile, is well known and has been well documented in the academic literature.⁸ Nonetheless, China's implementation both of these controls and of international commitments remains controversial. Throughout the 2000s, analysts regarded the Chinese government's record of enforcement as the weakest point in the country's controls; an area that continues to draw criticism.⁹ Explanations for the gap between commitment and implementation have ranged from geopolitics, for example,

⁴ Bowen 1999,16.

⁵ Kan 2015.

⁶ National Security Archive 2013.

⁷ Albright and Hinderstein 2001.

⁸ Medeiros 2005; J.-D. Yuan 2002; Bulkeley 2004; Yuan, Saunders and Lieggi (2002).

⁹ See for example Medeiros 2005; Huang 2012.

Chinese interests in Pakistan and the Middle East;¹⁰ to issues surrounding ‘interpretation’ and legitimacy of the controls;¹¹ to domestic issues such as ‘overlapping jurisdictional claims, unclear designation of lead agencies to prosecute violations, and bureaucratic wrangling’.¹² In order to understand the evolution of China’s approach to export control implementation, it is important to appreciate the interconnections between this and the changes to China’s strategic technology industry, which are considered in the next section.

3.0 China’s Evolving Strategic Technology Industrial Base

The elements of Chinese industry that currently hold ‘strategic technologies’ are different from those 20 to 30 years ago. In this context, ‘strategic technologies’ refers to technologies which could contribute to a WMD programme.¹³ Historically, these have been the preserve of large State-Owned Enterprises (SOEs), with strong ties to the Chinese government and military, and ultimately China’s strategic weapons programmes. Private enterprises manufacturing or dealing in such proliferation-sensitive technologies are a newer, increasingly significant, development. Generally speaking, they have fewer and less obvious and direct connections to the Chinese government.

Since 1978, China has implemented a series of wide-ranging and gradual market reforms to enable the state to make the transition away from a Stalinist model economy towards a socialist market economy with the possibility for individuals and firms to engage in private shareholding.¹⁴ China’s industrial capability has increased exponentially as a consequence of reform.¹⁵ This process of economic change has, in turn, had a significant impact on the strategic technology base, and hence the types of Chinese entity which could pose a proliferation risk.

China’s Economic Transformation

The economic changes initiated by Deng Xiaoping involved significant efforts to reform the SOEs. These can be considered within two distinct periods: the period between 1978 and 1992 which focused on ‘improving enterprise governance through allowing greater managerial autonomy and accountability’, and that after 1992, which saw incorporation of more ‘modern styles of management’.¹⁶ This reform saw the SOEs consolidated, and then continue to reduce in number into the 2000s. The number of SOEs in 2009 was an eighth of the number in 2000.¹⁷

The economic transition was accompanied by a growth in China’s private sector, albeit that that is a nebulous concept. Private enterprise was first ‘legitimised’ in 1988, but the privatisation of state enterprises and the growth of new private enterprises has faced

¹⁰ Paul 2008, 21-29.

¹¹ Jing-Dong Yuan 2002b.

¹² Srivastava 2005.

¹³ Note that many of the technologies which could be of use in such applications are ‘dual-use’ and could also be used in the defence industry or civil applications.

¹⁴ White et al. 1996.

¹⁵ Holz 2008.

¹⁶ Hong 2014, 163-64.

¹⁷ Cheong Cheok et al. 2014, 137-138.

numerous difficulties, not least the prohibitive burdens of profit collection placed on the state-owned sector by the government.¹⁸

The non-state sector, however, developed gradually in the 1990s and, from 1998 to 2010, the number of State-Owned and State-Controlled Enterprises decreased from 64,700 to 20,300, whilst the number of private industrial enterprises increased from 10,700 to 272,300.¹⁹ The increase in the number of private industrial enterprises over the course of the 1990s and 2000s was coterminous with, and was accelerated by, China's membership of the World Trade Organisation (WTO) from 2001 which marked a watershed in China's economic development.

However, the presence of SOEs in China's economy is fraught with complications; they still play a hugely important role. For example, whilst reduced to a fraction in original number, 90% of sales revenue of China's top 100 enterprises in 2011 was collected by SOEs.²⁰ State-owned firms have benefited since the 1980s from favourable conditions created by enterprise groups, sometimes referred to as the 'national champions'.²¹ There are still 111 'central' SOEs listed under the administration of the SASAC.²² In fact, recent accounts have noted that the SOEs are becoming 'wealthier and more powerful'.²³ In growing, many have diversified their activities and are significant competitors with foreign multinational corporations in many business areas.

Characterising Chinese industry today is challenging with the picture more complex than the often-portrayed state-private dichotomy.²⁴ There are other categories of firms subject to state involvement, with varying levels of administration and share-holding. A recent study notes three main components of the Chinese state sector: first, enterprises that are fully-owned by the state through State-owned Assets Supervision and Administration Commission (SASAC) of the State Council and the SASACs of provincial, municipal and county governments; second, SOEs that own majority shares in enterprises that are not themselves formally considered to be SOEs but are nonetheless controlled by the SOE or the state directly, which holds significant shares, i.e. state-holding enterprises or subsidiaries; third, entities based both within China and without, and owned and controlled, albeit indirectly, through SOE subsidiaries. It is clear that the picture of China's economic development is an increasingly complex one; the same holds true for China's strategic industries.²⁵

Strategic Industries

¹⁸ For the growth of China's private sector, see: Bennis Wai-yip So, (2002) p.360. For the associated challenges, see: Green 2003, 3; Bennis 2002, 361.

¹⁹ Hu Angang 2012.

²⁰ Hong 2014, 165.

²¹ Nolan 2001.

²² Sasac.gov.cn. 2015. "央企名录" (List of Central Enterprises), undated, <http://www.sasac.gov.cn/n86114/n86137/c1725422/content.html>. Accessed 25 August 2015.

²³ Economist.com. 2012. "New Masters of the Universe", 21 January 2012, <http://www.economist.com/node/21542925>. Accessed 25 August 2015.

²⁴ Cheong Cheok et al. 2014.

²⁵ Szamoszegi and Kyle 2011.

The history of China's development of 'strategic industries' is inseparable from China's economic transformation. In this context, 'strategic industries' is used to refer to the companies in China that are capable of producing 'strategic technologies'. There is, however, a distinction to be made between the use of the term in this context, and by the Chinese government when referring to the seven 'strategic' sectors identified for economic growth.²⁶

'Strategic technologies' encompasses a diverse set of materials and components – generally of higher specifications and quality. A few examples of these products include certain types of high-strength alloys, composites, certain valves, electronic components, and sensors.²⁷ In practical terms, there are great overlaps between the manufacturers of these goods, and those that supply the defence, nuclear, aerospace and space sectors.

China's manufacture and export of these types of goods has historically been concentrated in the state-owned sector, largely in defence, nuclear, or aerospace firms. The pre-2002 'administrative controls', a legacy of central planning, meant that only certain state-owned firms could export military and sensitive goods.²⁸ For example, there are still currently just 11 companies which are permitted to export arms.²⁹

This picture has been more complex in recent years. The defence SOEs, as with other industrial sectors, have also been subject to iterative reforms, albeit slower and weaker in nature than other sectors, reflecting the special status of these industries.³⁰ The opening up of Chinese markets has also diversified the types of actors holding strategic technology in China. China's WTO admission in 2001 saw 'a steady growth in the number of dual-use producing industries basing manufacturing operations in China to serve markets in the country and abroad'.³¹ This, and efforts to 'promote the commercialisation of scientific research outputs' amongst private enterprises ongoing since the mid-1980s have, among other factors, meant that the private sector in China is now a significant holder of sensitive, and especially dual-use, technologies.³²

The changes in the strategic industries in China have clearly impacted on the types of actors that could be involved in supplying a WMD programme. As Chinese non-proliferation scholars have noted:

China's economic transition underlines the urgency of strengthening export control... This makes the export of sensitive items and technologies unprecedentedly complex: on the one hand, there are a growing number of Chinese companies involved in export trade, including not only the state-owned

²⁶ Xinhuanet.com. 2010. "China to nurture 7 new strategic industries in 2011-15", 27 October 2010, http://news.xinhuanet.com/english2010/china/2010-10/27/c_13578293.htm. Accessed 25 August 2015.

²⁷ A good overview is provided in the lists of the Nuclear Suppliers Group and the Missile Technology Control Regime.

²⁸ Medeiros 2005, 11.

²⁹ CACDA and Saferworld 2012.

³⁰ Medeiros et al. 2005.

³¹ Srivastava 2005.

³² Bennis 2002.

*enterprises, but also a large number of private businesses, research institutes, joint ventures and foreign-funded enterprises.*³³

4.0 The Changing Behaviour of Chinese Entities

The 1990s and 2000s marked significant changes in the proliferation behaviour of Chinese entities. Over time, there has been decreasing involvement of, and concern regarding, Chinese SOEs in illicit trade. A variety of sources illustrate this changing behaviour, both in terms of reduced illicit transfers, and in terms of SOEs taking compliance activities and processes more seriously.

The difficulty in assessing patterns in illicit activities, including involvement in supplying WMD programmes, is that individual cases cannot be contextualised because a full dataset is not available. However, it is apparent that three inter-linked changes can be seen in the role of Chinese entities in the proliferation problem. First, more broadly, although difficult to quantify, there has been a decline of the involvement of Chinese entities in proliferation. Second, while many of the cases in the 1980s to early 2000s involved state-owned entities, there is evidence that this is less the case in recent years. Third, the type of technologies that Chinese entities are willing and able to supply has also changed. Rather than complete reactors, missile systems and production lines, most transfers are of constituent parts – especially ‘dual use’ technologies.³⁴

A qualitative assessment of historical cases available in open sources supports these conclusions. In terms of the actors involved, many of the transfers up to the mid-2000s involved SOEs. Notable were the activities of a number of state-owned ‘serial proliferators’, which included NORINCO and CPMIEC.³⁵ Other examples of SOE involvement include the implication of China National Nuclear Corporation in the transfer of ring magnets to Pakistan in the 1990s and Great Wall Industry Co. in missile proliferation to Iran in the 1990s and 2000s. However, more recently, open sources suggest that there has been a remarkable decline in reports of state-owned involvement in the latter half of the 2000s.

Since the mid-1990s, but more so in the 2000s, there has also been involvement of actors from the private sector. In some senses, this has been less well documented than the involvement of the SOEs. These have been individuals, playing the role of middleman, and small and medium private manufacturing and distribution companies. Perhaps the most prolific of recent years has been the network of businessman Li Fang Wei. Since the early 2000s, he has operated a network of front companies, and has been described as a ‘principal supplier’ of Iran’s missile programme.³⁶

³³ Li and Sun 2007.

³⁴ A key exception here would be the supply of Chinese reactors to Pakistan. Although this could be seen as a response to strategic competitor India’s NSG exemption.

³⁵ DeSutter, Paula A. 2003. “China’s Record of Proliferation Activities”, Remarks of Paula A. DeSutter Before the U.S.-China Commission, Washington, DC, 24 July 2003, <http://2001-2009.state.gov/t/vci/rls/rm/24518.htm>. Accessed 25 August 2015.

³⁶ United States District Court in the Southern District of New York. 2014. “United States of America – against- Li Fang Wei.” 28 April 2014,

The change in the types of goods transferred reflects a number of factors: China's international commitments, increased commitment to abide by them, and the types of industry involved. Complete reactors, missile systems and production lines have been, and continue to be, the preserves of the large SOEs. Their transfer, as in the current Pakistani reactor sales, may form part of more strategic relationships (as a response to the US-India nuclear deal for example) and be subject to careful planning by higher echelons of government rather than being a sign of industry and government commitment to China's international obligations.

Conversely, dual-use technologies which can form parts of these full systems and manufacturing capabilities are far more difficult to regulate, being of use in a diverse set of applications. Some of the dual-use goods of use in a WMD programme, such as certain types of industrial control system, are so commonly used in industry that controlling them would put too much of a burden and constraint on international trade. Therefore, these, types of goods, rather than complete systems, are more likely to be available from the growing number of private sector entities.

4.1 US Targeted Sanctions

China's involvement in the transfer of sensitive technologies may be viewed, albeit problematically, through the lens of US impositions of 'non-proliferation sanctions'. 'Sanctions' is a term with a wide variety of different meanings. At the strategic level, sanctions are comprehensive 'economic weapons' used 'to wage a nonmilitary campaign, extending the diplomatic process beyond verbal negotiations'.³⁷ The 'non-proliferation sanctions' being referred to here are a further subset of the sanctions toolset, which have frequently been imposed against entities by the US government for their alleged involvement in illicit trade. They involve a given entity being publically listed as 'sanctioned' with certain limits put on their business activities such as commercial activities with the US government, or other US entities. In practice, however, the sanctioning of a company can have broader effects on their business. Many large international companies screen potential customers and business partners against US lists and may, depending on specific context and risk appetite, avoid transactions with sanctioned entities even if they do not contravene the law.

The objectives of these 'non-proliferation sanctions' have been described as four-fold: deterrence; constraint; coercion; and action.³⁸ Sanctions – in theory – should have effects on the behaviour of the sanctioned party in the following ways: deterring the sanctioned entity, and the broader business community from involvement in proliferation; they should also constrain or 'reduce [an entity's] ability to make further contributions to

<http://www.justice.gov/usao/nys/pressreleases/April14/LiFangweiIndictmentPR/Li%20Fangwei%20in%20Rem%20Complaint%20and%20S1%20Indictment.pdf>. Accessed 25 August 2015.

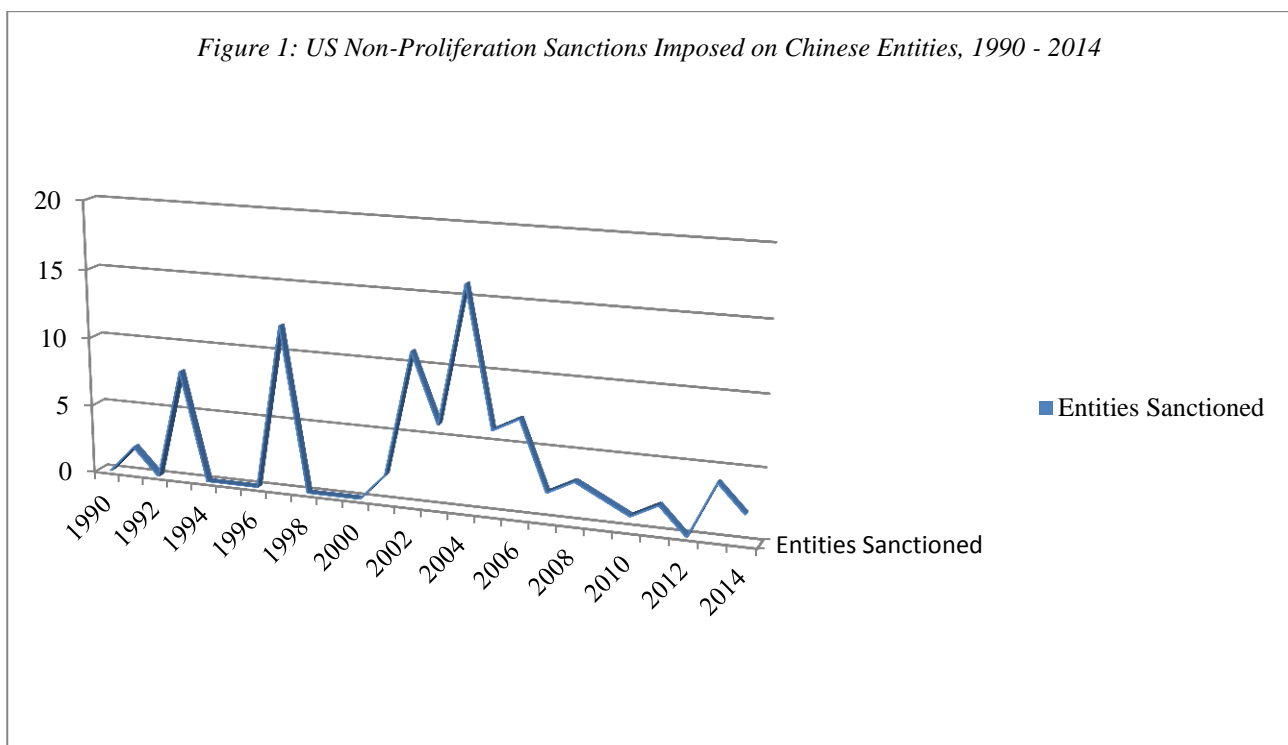
³⁷ Eyler 2007, 4.

³⁸ Speier, Chow and Rae Starr 2001, 3.

proliferation’; and they should also coerce or ‘secure improved behaviour’.³⁹ In practice, sanctions aim ‘to placate domestic groups who insist that the U.S. government ‘do something’ to address foreign misdeeds’.⁴⁰

As these four purposes set out, sanctions have a number of audiences. In the Chinese context they may (if the US intelligence which they are based upon is correct) be indicative of the target’s behaviour. However, first and foremost, they are a product of the US government’s understanding of proliferation concerns, and its domestic bureaucratic and political processes. As such, US sanctions against Chinese entities are telling: they highlight prevailing US concerns about the types of entities involved in proliferation.

The graph in Figure 1 shows the instances where non-proliferation sanctions were imposed on Chinese entities between 1990 and 2014.⁴¹



NB: Where multiple, sanctions based on different legislation were imposed on one entity, only one entry was made (some sanctions lasted multiple years). Entities allegedly operated by a single individual were counted once.

The 1990s marks the start of US uses of ‘non-proliferation’ sanctions in this form. The early sanctions were those imposed for involvement in proliferation of missiles and chemical weapons. The peak in sanctions in 1993 was coterminous with the Clinton

³⁹ Ibid.

⁴⁰ Hufbauer and Winston quoted in Speier, Chow & Rae Starr (2001)

⁴¹ Data found in the Federal Register. A good overview of non-proliferation sanctions on Chinese entities is supplied by Kan (2015). The graph details sanctions focused on entities based in mainland China (those in Hong Kong, Macau have been omitted because of their separate export control systems) and does not include Chinese subsidiaries of non-Chinese firms.

administration's sanctions following the supply of M-11 ballistic missiles to Pakistan in 1991 and 1992, and spare parts the following year.⁴² A second peak in 1997 relates to the sanctioning of a number of Chinese firms for supplying an Iranian chemical weapons programme, reflecting US intelligence concerns at the time.⁴³

The approaches taken to sanctions by different administrations can be seen in the graph. Comparatively-speaking, Clinton used sanctions more reluctantly 'to complement [our] diplomacy'.⁴⁴ Demarches were much preferred.⁴⁵ As a top Clinton administration official noted, 'Sanctions have a key role. Nobody likes them much'.⁴⁶

Further reflective of US bureaucratic politics, the sanctions levied against Chinese entities in 1993 related to transfers of MTCR 'Category II' items, even though allegations made in the press regarded the transfer of 'Category I' full systems.⁴⁷ Critics alleged that 'delaying tactics, re-writing reports, and setting high evidentiary standards' prevented the imposition of more stringent 'Category I' sanctions.⁴⁸ A report of the Senate Foreign Relations Committee noted that the administration had employed 'bureaucratic manoeuvres' to delay the production of 'findings of fact' by the intelligence community, and did not schedule the required interagency meetings to assess findings.⁴⁹ The Director of the CIA's Nonproliferation Center noted that a lack of legal flexibility could result in officials behaving like a 'defense attorney working to undermine the evidence indicating a transfer has occurred'.⁵⁰

Similarly, US domestic and bureaucratic politics can explain the graph from 2001 onwards. The period more generally was characterised by the climate following 11 September 2001, and US government responses to terrorism. There was also increased awareness surrounding proliferation, especially following the announcement of Iran's covert nuclear work in August 2002.

Bolton, Under Secretary for Arms Control and International Security Affairs (May 2001 – July 2005), was responsible for the increase in sanctions, bringing to the State Department a number of Republican congressional staff who shared his views on their utility.⁵¹ He worked 'methodically' to reinvent the non-proliferation regime, 'crafting policies to fill gaping holes, reinforcing earlier patchwork fixes ... and changing perceived realities

⁴² Milhollin and White 1991; Gertz 1994.

⁴³ Director of Central Intelligence 1996.

⁴⁴ Davis, Lynne E. 1996. "Controlling the Treat of Dangerous Weapons: An Overview of the Clinton Administration's Non-Proliferation Policy." Testimony to the House Committee on International Relations, 19 June 1996, http://www.fas.org/spp/starwars/congress/1996_h/h960619b.htm. Accessed 25 August 2015.

⁴⁵ Holum, John. 1999. "US Congressional Confirmation Hearing." Statement to the Senate Foreign Relations Committee, 28 June 1999, <http://www.acronym.org.uk/dd/dd38/38uscon.htm>. Accessed 25 August 2015.

⁴⁶ Holum, John. 1999. "Arms Control Agenda after ACDA." Remarks to the ACA Annual Meeting, 26 March 1999, http://www.armscontrol.org/act/1999_03/jhmr99. Accessed 25 August 2015.

⁴⁷ Scherr and Dybvik 1992.

⁴⁸ Kan 2006.

⁴⁹ Ibid.

⁵⁰ Oehler quoted in Speier, Chow and Rae Starr 2001.

⁵¹ Boese 2008.

and stilted legal thinking’.⁵² Within three years of taking office, the imposition of sanctions increased by ‘about 400 percent’.⁵³ The role of these individuals and approach to sanctions is amongst the most important factors in interpreting the graph.

The end of Bolton’s tenure saw a change in personnel, evolving priorities, and new legislation, which can all explain the declining use of these non-proliferation sanctions on Chinese entities. Bolton’s successors certainly placed less emphasis on this non-proliferation tool.⁵⁴ Of the sanctions imposed, more were financial-based, implemented by the Treasury. These constituted half of all sanctions against Chinese firms between 2006 and 2008, imposition being ‘procedurally and bureaucratically easier’.⁵⁵

Types of Chinese Entities Targeted

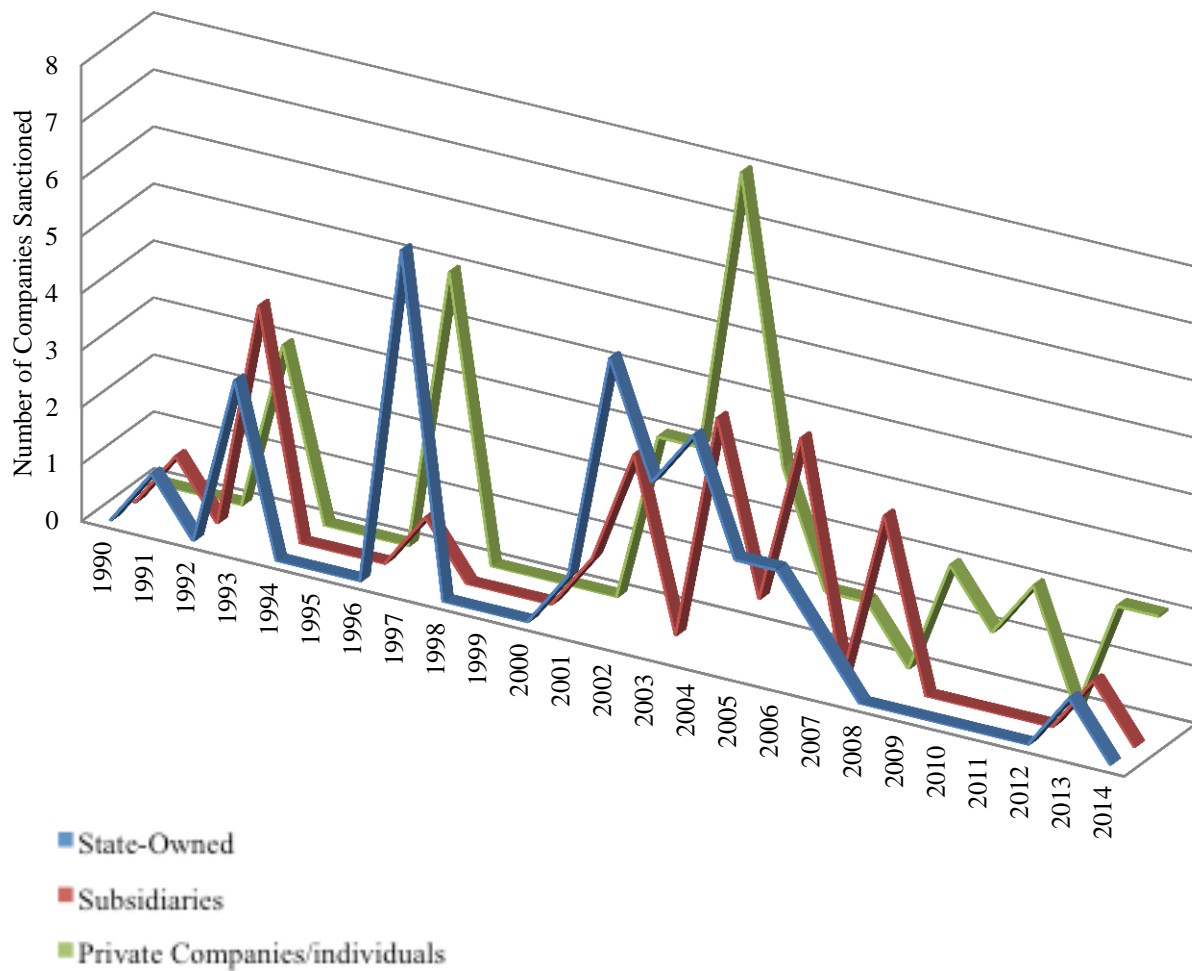
The quantitative view is undeniably problematic and yet it does reflect subtle nuances in the evolution of the Chinese proliferation problem. Reliance on this data largely, and relatively accurately, illustrates the preoccupations of US domestic and bureaucratic politics. However, when broken down by entity type, the data set does illustrate a shift in US concern away from the state-owned, and towards the private sector. This, in and of itself, is revealing. As discussed, drawing up a typology of Chinese industry is not easy. However, basic categories have been used to map out the historic instances of US sanctions being imposed. Figure 2 represents a survey of sanctions imposed on Chinese entities from the state-owned, SOE subsidiary, and private sector.

⁵² Bolton 2004b.

⁵³ Bolton 2004a.

⁵⁴ Boese 2008.

⁵⁵ Ibid.

Figure 2: Types of Chinese Companies Sanctioned Per Annum, 1990 - 2014

NB: Where multiple, sanctions based on different legislation were imposed on one entity, only one entry was made. Entities known to be operated by a single individual were counted once.

Dividing the data according to business types loosely supports the conclusions drawn regarding the changes in the types of Chinese firms involved in proliferation. The early peaks of sanctions in 1993 and 1997 comprise a fairly evenly-distributed mixture of types of actors involved in proliferation.

Corresponding with the export control changes of the early 2000s, there is a clear decline in the sanctioning of Chinese SOEs. From 2002 onwards, sanctions on the state-controlled sectors gradually decline to almost zero from 2009 to 2014. A similar, although less obvious, decline in sanctions impositions on SOE subsidiaries is also visible from 2002 onwards, with oscillating peaks that tail off towards 2009 after which, like the state-owned category, no sanctions are imposed until 2013. The same overall trends of improvement are not discernable in the private sector.

Again, the data has limitations. Clearly considering the number of sanctioned entities has no bearing on the significance of the companies' activities. Similarly, within the private sector the number of sanctioned entities is not actually that great. While a large number of entities have been sanctioned since 2008, these have largely focussed on the activities of a single businessman, Li Fang Wei.

It is clear from both open sources and the sanctions data presented above that there has been a change in the role of Chinese entities in proliferation. Evidence suggests that large SOEs are involved in the illicit trade of sensitive technologies less than they were in the 1990s and early 2000s. As US Assistant Secretary of State Thomas Countryman noted at a May 2015 hearing, 'over the last 15 years or 20 years ... what we've seen is that Chinese state-owned enterprises are out of the business of proliferating technology to North Korea and Iran', instead this role has been assumed by 'a very dynamic, very high-tech private sector'.⁵⁶

5.0 Explaining Behavioural Change

It is clear that the proliferation problem has shifted in a manner both reflective of China's developing industry and evolving national non-proliferation stance. The development of the private sector as a source of proliferation sensitive goods has already been discussed. This section considers behavioural change – especially amongst the SOEs – in more depth, drawing on the policy implementation and Chinese industry compliance and risk management literature, and experience elsewhere to contextualise the described changes.

Export Controls and Compliance

In 2002, China transitioned from an *ad hoc*, 'administrative' export control structure to a legally underpinned, institutionalised system. The new system was implemented on the basis of the promulgation of a raft of non-proliferation and export control legislation from China's State Council, and was widely acknowledged as a significant step forward. It has been suggested that the emphasis on 'a new export control dynamic'⁵⁷ allowed China to move beyond previous policies and rhetoric⁵⁸ and is indicative of the country's 'conscientious effort to adapt to internationally accepted standards and practices'.⁵⁹

Whilst China's imposition of new legislation certainly was a positive step, in order for controls to be effective, industry needs to be compliant. Practically, this means applying for, or ensuring that firms hold export licenses permitting the firm's export of goods to a certain end user. The license is granted by the licensing authority – which in China is in most cases a section of the Ministry of Commerce (MOFCOM)⁶⁰ – subject to the conclusions drawn through an inter-departmental process. Licensing decisions in China,

⁵⁶ Countryman 2015.

⁵⁷ Srivastava 2005, 6.

⁵⁸ Lieggi 2003.

⁵⁹ Jing-Dong Yuan 2002a, 215.

⁶⁰ As in other countries, other government agencies are also involved in licensing for certain types of goods. China has recently been restricting its export licensing function.

as in other countries, are judged on the basis of China's international obligations and foreign policy goals.

More recent non-proliferation literature has highlighted that compliance with export controls alone does not prevent proliferation. Going beyond-compliance is sometimes necessary in this regard.⁶¹ Beyond-compliance measures are particularly important in cases where non-controlled goods – which still can be of use in WMD programmes – are involved, and where entities successfully deceive exporters and national authorities. However, while compliance is in some regards not sufficient, it is a necessary starting point.

With this in mind, a number of large Chinese SOEs – including several described as 'serial proliferators' in the past – have put in place internal compliance programmes (ICPs) to ensure that they do not breach national, US, and other regulations. These systems have many similarities with those put in place by other companies around the world. Best practices and efforts to share them have been increasing around the world. Similarly, a number of compliance officials in Chinese companies have travelled to the US or Europe for training and discussions with industry counterparts and governments.

Initial interest from SOEs in ICPs was seen around the introduction of the new regulations in 2002.⁶² The pioneering role played by NORINCO has been highlighted, in taking a 'different' response to sanctions, putting in place an ICP, and 'touting' its nonproliferation credentials.⁶³ In 2008, a NORINCO executive stated that the company could 'serve as an educator and lobbyist on the subject of export control compliance'.⁶⁴ NORINCO's work has certainly encouraged other SOEs to implement ICPs.

That changes in SOE behaviour of large in some sense reflects "top-down" directives regarding Chinese government non-proliferation policy is undeniable. There have clearly been some joint efforts between these SOEs, Chinese government departments and quasi-governmental organisations to effect these changes.⁶⁵ There are also, in theory, direct routes for policy dissemination amongst senior management, who are in many cases senior party members. For example, in 2013, 17 prominent political leaders held positions in SOEs, and 27 SOE bosses were Central Committee members.⁶⁶ A number of other dissemination routes to executives have been highlighted, for example, the cadre transfer system of the *Nomenklatura*.⁶⁷ All large SOE executives being appointed by the party also can incentivise the pursuit of stated policy goals. A 2011 report

⁶¹ Salisbury 2013.

⁶² Medeiros 2005, 86.

⁶³ Lieggi 2010, 45.

⁶⁴ US Embassy Beijing. 2008. "Visiting Staff Del Meets NORINCO Officials." 31 March 2008, Cable No.08BEIJING1203, <http://wikileaks.org/cable/2008/03/08BEIJING1203.html>. Accessed 25 August 2015.

⁶⁵ US Embassy Beijing. 2007. "NORINCO CLAIMS TO BE FORGOING SALES TO IRAN." 30 April 2007, Cable No.07BEIJING2896, <http://wikileaks.org/cable/2007/04/07BEIJING2896.html>. Accessed 25 August 2015..

⁶⁶ Hong 2014, 175.

⁶⁷ Brødsgaard 2012, 625.

on banking notes that ‘if maximizing shareholder value conflicts with state goals, SOEs and their wholly-owned subsidiaries are likely to pursue the goals of the state’.⁶⁸

However, context, the relative importance given to non-proliferation policy, and competing interests (especially involving the military), mean that conflicts may not always be resolved in favour of non-proliferation or national policy. The literature on policy implementation in China, perhaps, provides insights into the difficulties of implementing export controls. Since 1978 a number of factors – including decentralisation, the decrease of ideological policy, and less scope for coercion – have meant that policy implementation involves increased bargaining, and compromise not necessarily conducive to regulatory enforcement or compliance.⁶⁹ A 2011 Chinese study notes that while political connections can certainly have a role in determining management behaviour, context is important in determining how, with party elites often using SOE positions as a vehicle for personal progression.⁷⁰

Insights from the Compliance and Risk Management Literature

The compliance and risk management literature provides useful “bottom-up” insights into what drives industry to comply with the regulations, and also to put in place beyond-compliance systems and processes. Whilst largely focused on other topic areas, there have been efforts to apply these insights to non-proliferation and export controls.⁷¹ Two principal schools of thought dominate this literature. The first has its basis in a deterrence model; that entities are compelled to comply by the threat of noncompliance penalties, ‘negative drivers’ of compliance.⁷² These accounts often imply that entities choices – to be compliant or not – centre around three factors: the perceived likelihood of punishment, the likely costs of punishment, and the payoff for undertaking an activity.⁷³

This cost-benefit view of compliance has some traction in the Chinese case. The threat of US sanctions is clear to many Chinese firms. It is clearest to the large SOEs which export strategic technologies, have a diverse product base, potential to take significant profits from international and especially US markets, and hence more to lose. US non-proliferation sanctions can include a prohibition on contracts with the US government, and trade with US companies. However, the effects of US sanctions are not confined to US markets – they have a ‘ripple effect’, in terms of reputation and fear, making firms around the world which deal with US markets reluctant to deal with sanctioned companies.

Sanctions have had significant effects on Chinese SOEs. Take for example NORINCO’s US exports which dropped \$100 million a year under sanctions, and reached almost \$70 million in 2009 after sanctions were lifted in 2007.⁷⁴ NORINCO officials detailed

⁶⁸ Szamosszegi and Kyle 2011.

⁶⁹ Lieberthal and Lampton 1992.

⁷⁰ Du, Zeng quan and Du 2011.

⁷¹ Salisbury 2013.

⁷² May 2004.

⁷³ Piliavin et al. 1986.

⁷⁴ Wilkins 2009.

that sanctions cost the company \$200 million up to 2006.⁷⁵ Discussions between NORINCO and US government officials saw NORINCO officials acknowledge that sanctions had caused them a lot of trouble.⁷⁶ Representatives from other SOEs have noted that it was the imposition of US sanctions that first triggered their company's interest in establishing an ICP.⁷⁷

The increasing diversity of many of the SOE's product ranges is helpful in this regard. While NORINCO was initially sanctioned for illegal AK-47 shipments to the US and goods to Iran's missile programme, its goods for the US market after sanctions were lifted included 'solar lanterns implanted in gardens and driveways' and 'wind turbines and blades'.⁷⁸

More broadly, in the scholarly literature on industry compliance, explanations centring on a cost-benefit analysis have been viewed as having limited explanatory value. Many of these limitations clearly apply to the Chinese context. In such accounts, businesses are framed as unitary and rational actors. To consider Chinese state-owned enterprises as 'unitary' actors is grossly simplistic. In this context, rationality is especially linked to business as profit-maximisers, which is not always the case.

Examples show that company officials can act without authorisation, or with only tacit approval, from superiors. One instance suggests that a case involving ballistic missile guidance components to Iran allegedly involving CPMIEC (accounting for all sanctions on Chinese SOEs between 2006 and 2013), was in fact carried out personally by a named 'CPMIEC Official'.⁷⁹ A second example suggests that 'a NORINCO employee responsible for the firm's sales to Iran, angry to see his bonuses disappearing, was "causing lots of trouble" which eventually led senior management to step in'.⁸⁰ These examples highlight the difficulty of building ICPs in such large organisations with multiple subsidiaries, divisions and facilities. Most of the large Chinese SOEs which produce sensitive technologies have many subsidiary companies, separate manufacturing divisions, and thousands of employees.

In terms of 'negative drivers' of compliance in Chinese industry – despite the clear risk posed by US sanctions – there is no similar narrative on the Chinese government side. In countries that have more mature export control systems – for example in the UK – 'there is far from a successful and on-going communication of a narrative, which would support the case for deterrence'.⁸¹ This is even more the case in China where only a handful of

⁷⁵ Center for Nonproliferation Studies 2006.

⁷⁶ US Embassy Beijing. 2007. "NORINCO claims to be forgoing sales to Iran." 30 April 2007, 07BEIJING2896, <http://cables.mrkva.eu/cable.php?id=106233>. Accessed 25 August 2015.

⁷⁷ Confidential correspondence, Chinese SOE compliance official, March 2015.

⁷⁸ Wilkins 2009.

⁷⁹ Secretary of State. 2006. "Response to China on E.O. 13382 Designations; New Information on CPMIEC." 28 June 2008, Cable No.06STATE106928, <http://wikileaks.org/cable/2006/06/06STATE106928.html>. Accessed 25 August 2015.

⁸⁰ US Embassy Beijing. 2007. "NORINCO Claims to be foregoing sales to Iran." 30 April 2007, Cable No.07BEIJING2896, <http://wikileaks.org/cable/2007/04/07BEIJING2896.html>. Accessed 25 August 2015.

⁸¹ Salisbury 2013, 543.

prosecutions have been publically reported.⁸² In May 2004, MOFCOM published information about fines against two companies without specific details.⁸³ Between 2006 and 2008, details of three further cases were released, featuring company names, details of the goods and fines. However, no further actions have been publically recorded, and suggestions that CPMIEC executives have been imprisoned for non-proliferation-related offenses have not been confirmed officially.⁸⁴

Perhaps the most difficulty with a deterrence-based view of compliance is caused by the view of companies as ‘amoral calculators’.⁸⁵ By looking at compliance through a merely cost-benefit lens, a key element of the equation is missing – that relating to corporate social responsibility and reputation. In this respect, the compliance literature describes ‘societal pressure’ acting as a ‘social license’, and helping to motivate compliant behaviour.⁸⁶

There is clear evidence of these factors playing a growing role – albeit a less important role than the risk posed by US sanctions – in the Chinese case.⁸⁷ For example, a NORINCO executive has noted that the company wants to be seen ‘internationally as a responsible player’.⁸⁸ Similarly, 2008 discussions saw a NORINCO executive cite will to shed the ‘distorted image’ of the firm and become ‘a decent member of the international community’ as reasons for implementing an ICP.⁸⁹ The ICP was described as an ‘obligation owed by NORINCO Group’s 700,000 employees to the Chinese Government’.⁹⁰ The driver played by reputation is seen in the compliance statements and news articles regarding recent export control training events which are now seen on the websites of large SOEs.⁹¹ However, such notions should be considered in light of the difficulty that SOE compliance officers often have in obtaining support and resources from senior management for their ICPs.⁹²

Some of the conclusions drawn above are reflected by findings in the Chinese risk management literature, and that regarding industry compliance in other countries. A 2003 survey of over 500 Chinese companies concluded that larger companies were likely to

⁸² Lieggi 2010.

⁸³ Peopledaily.com.cn. 2004. “Two Chinese Companies Fined for Violating Regulations on Missile Export Control.”, 26 May 2004, http://english.peopledaily.com.cn/200405/26/eng20040526_144379.html. Accessed 25 August 2015.

⁸⁴ Center for Nonproliferation Studies 2006.

⁸⁵ Kagan and Scholz 1984.

⁸⁶ Kagan, Gunningham and Nielsen 2011.

⁸⁷ Suggested by a participant at a 2012 compliance workshop; confidential correspondence, Chinese SOE compliance official, March 2015.

⁸⁸ Center for Nonproliferation Studies 2006.

⁸⁹ US Embassy Beijing. 2008. “NORINCO briefs Embassy on its Export Control Compliance Efforts.” 31 March 2008, Cable No.08BEIJING1201, <http://wikileaks.org/cable/2008/03/08BEIJING1201.html>. Accessed 25 August 2015.

⁹⁰ Ibid.

⁹¹ See for example, Norinco.com. 2014.

“NORINCO Corporate Statement on Nonproliferation, Export Control, and Internal Compliance.” 1 January 2014, <http://www.norinco.com/GB/61/99/101/283.html>. Accessed 25 August 2015.

⁹² Confidential correspondence, Chinese SOE compliance official, March 2015.

take more interest in compliance, CSR and to disclose such activities.⁹³ A 2005 regional study also suggests that large and medium companies were more likely to be aware of CSR issues than small companies.⁹⁴ These studies reflect the above conclusion that large SOEs have taken more of an interest in export controls and ICP implementation. However, data collected during the same 2003 study was unable to show a relationship between companies' ownership (state or private) and compliance interest.⁹⁵

Another in-depth study involving 137 employees of "oversize" SOEs provides more details regarding the current state of risk management practices. The survey was conducted among employees from a wide range of functions, albeit none working specifically in the legal or compliance area. The 2011 survey suggests that the benefits of systematic approaches to risk management were not appreciated, with only 33% responding that good risk management can increase corporate value, 12% responding that it is useful for fulfilling compliance obligations, and 7% responding that it can give companies a competitive advantage.⁹⁶ The author found it 'especially astonishing' that no respondents believed risk management could decrease management costs.⁹⁷ These results go some way to explaining why it is often difficult for those working on compliance at SOEs to gain senior management support and resources for their efforts.

Interesting and supportive comparisons can also be drawn with industry's compliance with export controls in other countries. A 2013 study – including data from a 2011 industry compliance survey and interviews in the UK – found little evidence to suggest that compliance officials consider 'compliance with sanctions and export controls in a mere cost-benefit manner'.⁹⁸ While penalties were important, social factors such as reputation were often more important, especially in cases where firms were to go 'beyond-compliance'.⁹⁹ Similarities are also found regarding the importance of fear of blacklisting by the US government, especially amongst UK and transnational firms supplying into the US defence and aerospace markets. Over a quarter of companies surveyed responded that the fear of blacklisting was a main driver of their compliance beyond the basic national legal requirements.¹⁰⁰ It is clear that amongst other elements of Chinese private enterprise, companies that have strong connections to the US – in terms of business or ownership – often have the most rigorous compliance programmes in place.¹⁰¹

Compliance costs can be extensive and varied, and for example, relate to the costs of turned down business, and setting up and maintaining an ICP. These costs are more important in terms of the extent to which a company can resource its compliance efforts, rather than its motivations to comply.¹⁰² The large Chinese SOEs, like the large defence

⁹³ Li 2006.

⁹⁴ Zhou 2011.

⁹⁵ Li 2006.

⁹⁶ Zhou 2011.

⁹⁷ Ibid.

⁹⁸ Salisbury 2013, 543.

⁹⁹ Ibid.

¹⁰⁰ Ibid.

¹⁰¹ Company presentation, Compliance workshop, Dalian, 2012.

¹⁰² Salisbury 2013, 548.

and aerospace conglomerates in the UK and elsewhere, certainly have more resources to put into their compliance efforts. As in the UK, smaller Chinese firms often have difficulty obtaining the resources for compliance, finding it burdensome and challenging.¹⁰³

6.0 Effectiveness of Sanctions

These conclusions provide an interesting lens by which to consider the effectiveness of sanctions in affecting behaviour at the enterprise level. In the Chinese case, it is useful to distinguish between those companies that have been sanctioned on a one-off basis, suggesting that the sanctions may have caused a behavioural change, and the so-called ‘serial proliferators’ – a small number of Chinese firms, both state and privately owned – and individuals that continue to undertake illicit WMD-related trade despite the repeated imposition of US sanctions.¹⁰⁴

State-owned firms such as CPMIEC, and private entities such as Li Fang Wei and his various companies, present cases where sanctions may have not worked in deterring continued involvement. However, this is not to say they haven’t worked in other regards – for example, preventing firms from being able to conduct financial transactions, or disrupting and increasing the costs of their activities. Li’s activities present a case in point – sanctions have caused him to open new companies, and let old ones lapse in clear patterns of evasion.¹⁰⁵

However, non-proliferation sanctions have clearly affected the decision making calculus of some SOEs, driving them to set up ICPs.¹⁰⁶ Despite some differences between US administrations, their continual use by US governments since Clinton’s shows that they are perceived to be effective. For example, in 2005 US State Department official, Stephen Rademaker, stated that US policy of ‘simultaneously engaging China in dialogue and pursuing the aggressive imposition of sanctions where required may be bearing some fruit.’¹⁰⁷ He credited the pressure of sanctions with an interdiction by Chinese authorities of chemicals on their way to North Korea, and the disclosures of the prosecution of two companies in May 2004.

These effects need to be considered in the context of collateral damage to Sino-US relations. The imposition of sanctions is often met with indignation. The sanctions imposed in 1997 were described by an MFA spokesperson as ‘totally groundless’.¹⁰⁸ One of the companies described them as ‘absolutely drawn from the air’.¹⁰⁹ Sanctions in 2006 saw the MFA respond by declaring that dialogue with the US is ‘useless’, and the sanctioning

¹⁰³ Comment made by industry attendee at workshop, Tianjin, February 2014; confidential correspondence, Chinese SOE compliance official, March 2015.

¹⁰⁴ See for example, DeSutter, Paula A. 2003. “China’s Record of Proliferation Activities”, Remarks of Paula A. DeSutter Before the U.S.-China Commission, Washington, DC, 24 July 2003, <http://2001-2009.state.gov/t/vci/rls/rm/24518.htm>. Accessed 25 August 2015.

¹⁰⁵ Salisbury and Stewart 2014.

¹⁰⁶ Confidential correspondence, Chinese SOE compliance official, March 2015.

¹⁰⁷ Rademaker, Stephen G. 2005. “Remarks to U.S.-China Economic and Security Review Commission.” 10 March 2005, <http://2001-2009.state.gov/t/ac/rls/rm/43277.htm>. Accessed 25 August 2015.

¹⁰⁸ Associated Press 1997.

¹⁰⁹ Arms Control Today 1997.

represented a violation of trust.¹¹⁰ In 2008, sanctions were described as ‘incrementally destroy[ing]’ cooperation between the US and China on non-proliferation, and in 2009 as ‘unilateral’ and counter to non-proliferation norms.¹¹¹ Part of the issue, it seems, is that the information provided by the US to China is said to be limited and not of a ‘legal’ standard.¹¹² The response by China to sanctions imposed against the front companies of Li Fang Wei in April 2014 – capture the key dilemma in this regard – with a MFA spokesperson declaring that the sanctions ‘will harm bilateral cooperation on counter proliferation’.¹¹³ Similarly, it is often the case that Chinese companies actions may not have breached Chinese law, making it difficult for Chinese authorities to take action.¹¹⁴

7.0 Conclusion

China’s role in stemming the illicit trade supplying the nuclear programmes of Iran and North Korea is likely to be pivotal, and increasing in importance as China’s manufacturing base grows. This survey has considered the changing role of Chinese entities in WMD proliferation. In so doing, it has attempted to provide insights into the changing role of Chinese industry, and the response of Chinese actors to China’s changing non-proliferation stance.

This analysis – supported by insights gained from fieldwork and discussions in China and the UK – suggests that there has been a declining role of, and concern regarding, Chinese SOEs in proliferation. This has been seen because of further interest in and resource allocation to ICPs reflecting both influence of the Chinese government’s changed position, a desire to demonstrate compliance and conduct business with international partners, and some increasing social awareness.

The paper has argued that these changes, and other aspects of the changing situation on the ground in China, reflect insights from the broader Chinese risk management literature and the opportunities and challenges facing governments and industry in other countries in preventing proliferation using export controls. Industry outreach on non-proliferation and export compliance is a challenge for all governments, although undoubtedly the scale of this challenge is greater in China. That larger organisations – such as Chinese SOEs and large western conglomerates – have more to lose and are able to put more resources into ICPs is not specific to China.

¹¹⁰ US Embassy Beijing. 2008. “China Shocked at E.O.13382 Designations of Four Chinese Entities.” 13 June 2008, Cable No.06BEIJING12181, <http://wikileaks.org/cable/2006/06/06BEIJING12181.html>. Accessed 25 August 2015.

¹¹¹ US Embassy Beijing. 2008. “China Protests Pending Sanctions Against Three.” 22 October 2008, Cable No.08BEIJING4019, <http://wikileaks.org/cable/2008/10/08BEIJING4019.html>. Accessed 25 August 2015; US Embassy Beijing. 2009. “China Protests Sanctions Against Dalian Sunny Industries/LIMMT And Bellamax.” 23 January 2009, Cable No.09BEIJING154, <http://wikileaks.org/cable/2009/01/09BEIJING207.html>. Accessed 25 August 2015.

¹¹² US Embassy Beijing. 2008. “China Shocked at E.O.13382 Designations of Four Chinese Entities.” 13 June 2008, Cable No.06beijing12181, <http://wikileaks.org/cable/2006/06/06BEIJING12181.html>. Accessed 25 August 2015.

¹¹³ Blanchard 2014.

¹¹⁴ Interview with unnamed Chinese expert, March 2015.

While improvement is welcomed in the state-owned sector's role in non-proliferation, the challenge posed by the strategic manufacturing capability of China's growing private sector needs serious consideration. This will be the most significant challenge going forwards. Efforts need to be made to ensure that export control compliance is taken seriously, and that appropriate resources are available to Chinese companies in the form of best-practice guidance and training materials.¹¹⁵

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¹¹⁵ Participant at a 2014 compliance workshop; Confidential correspondence, Chinese SOE compliance official, March 2015.

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